

March 30, 2006

Memorandum

To: Chief, Branch of Permits, Office of Management Authority, Arlington, Virginia

From: Deputy Field Supervisor, Jacksonville Field Office, Jacksonville, Florida

Subject: Calendar Year 2005 Annual Report for Marine Mammal and Endangered Species Permit PRT 770191

Manatee rescue, rehabilitation, and release activities are authorized under the Marine Mammal and Endangered Species Permit PRT 770191, issued to the Field Supervisor in the U. S. Fish and Wildlife Service's Jacksonville Field Office. This permit was reauthorized on March 4, 2005.

During 2005, the Service's Jacksonville Field Office and program participants holding letters of authorization from the Service were involved in the following manatee activities:

Summary of rescues and releases: Program participants were contacted by the public to verify the status of hundreds of manatees thought to be in distress and in need of assistance. A total of 70 manatees were rescued this year, of which 40 were brought into captivity for further medical attention and 29 were treated onsite and released. One rescue was classified as unsuccessful, as the animal escaped prior to receiving assistance (see attached Rescue Report). Reasons for rescue included entanglements (18), abandoned calves (14), watercraft strikes (11), tidally stranded (7), entrapments (6), cold stress (3), calves with injured moms (4), red tide (1), and other various causes (3). Of the 40 brought into captivity, four manatees were released back into the wild (see attached Release Report), 10 died during rehabilitation, 4 died during transport, and 3 died during rescue (see attached Death Report). Currently, 19 of the rescued animals are receiving medical treatment at participating rescue/rehabilitation facilities.

Captive animals: At the year's end, 58 manatees in 11 authorized facilities were in captivity for treatment (see attached Facility Inventory Report), including those receiving long term care. Captive animals consisted of 34 females and 24 males; of these, four individuals are "pre-Act" animals caught for display purposes prior to the enactment of the Endangered Species Act.

Releases: Thirteen animals were released last year, of which, eight were rescued prior to January 1, 2005 (see attached Release Reports). All animals released were PIT-tagged and photo identified; individuals without distinguishing marks (e.g., body mutilations) were freeze-branded to facilitate identification in the wild. Radio and satellite tags were attached to seven released captives to monitor adaptation to the wild. Of these, three individuals lost their tags; their current

location is unknown. The Manatee Rehabilitation Partnership, a sub-team of the Interagency-Oceanaria Working Group, in conjunction with the Service, coordinated the post-release monitoring.

Transfers: Fifteen manatees were transferred in 2005 (see attached Transfer Report). Reasons for transfer included: staging for pending release (7), to make room at critical care facilities (2), to pursue medical treatment (1), and five for management related reasons.

Births: No manatees were born in captivity during the year 2005.

Deaths: Twenty-five captive manatees died during 2005 (see attached Death Reports). Of these, 20 deaths were from individuals rescued this year, while five were from previous years' rescues. Thirteen animals died during rehabilitation at a facility, five died following release, four during transport and three during rescue. Causes of death included: watercraft (9), perinatal (6), cold stress (3), miscellaneous medical causes (3), red tide (1) and three not determined.

Program Meetings: Two Interagency/Oceanaria Working Group meetings were held during 2005. The spring meeting was held at Mote Marine Laboratory in Sarasota and the fall meeting was held at SeaWorld Orlando. Agenda items included updates on health and distribution of all captive manatees, rescue, release and transfer planning and reporting, post-release monitoring updates, death reports, presentations on research relevant to the captive program, and discussions regarding program issues, goals, and initiatives. The annual meeting for facility veterinarians was held in June at SeaWorld Orlando; discussion topics included individual manatee case studies, post-release monitoring health assessments, research topics related to manatee health, medical treatments and protocols, and papilloma virus.

Papilloma virus: Captive manatees residing in Homosassa Spring Wildlife State Park were identified with the papilloma virus in 1997. Progress of the virus in these manatees has been continually monitored. Lesion characteristics of the virus have been mapped on affected manatees and their status documented. Typically viruses of this nature are benign and self-limiting. The impact this virus may have on captive and wild animals is unknown. A quarantine has been maintained at the facility.

In 1998, similar lesions appeared in wild manatees outside the park. Biopsies were taken from wild animals and subsequently tested negative for the virus. Two of the animals with lesions were tagged. Results from that telemetry study provide support to a theory that varied salinities and water temperatures may have a positive effect on the expression of the lesions. It has been proposed that the homeostatic environment at the park may promote the growth of lesions. One theory suggests that the papilloma virus is latent in almost all manatees until it is expressed due to certain circumstances when animals become stressed (e.g., changes in salinity, temperature, and other environmental stressors). An epidemiology study was initiated in the fall of 2004 for papilloma virus in wild manatees residing in the Homosassa and Crystal Rivers region. Two animals with suspect papilloma virus lesions were tagged in 2004 and one was tagged in 2005; all biopsies came back negative for the presence of the virus. The study is planned to continue for next several years. In addition, an extensive sampling effort is planned for the winter of 2005-2006 for both the Homosassa and Crystal Rivers. The purpose of this effort will be to acquire a blood and tissue on a large number of manatees within this "hot area" in an attempt to find virus

in the wild. This will be a collaborative effort involving the Service, USGS, the State of Florida, researchers involved in papilloma virus studies and various other program partners.

During 2003, scientists from Harbor Branch Oceanographic Institute, Brown Cancer Center and the University of Louisville School of Medicine, Louisville, Kentucky sequenced the entire manatee papilloma virus (now officially designated as TmPV-1). The Institute produced a vaccine for papilloma virus; the vaccine was recently tested on horses infected with an equine papilloma virus. The vaccine proved effective on the trials conducted on the six horses. In conjunction with the vaccine production, the Institute also produced an ELISA test. The vaccine and ELISA test are currently being tested and validated on infected captive manatees at Homosassa in an above-ground pool.

In November 2003 Service staff visited SeaWorld of San Diego where they discovered that a manatee at the facility tested positive for the papilloma virus. Subsequently, an additional case of the papilloma virus was discovered on a manatee at SeaWorld of Orlando.

In 2005 two manatees from SeaWorld San Diego were transferred to the Cincinnati Zoo for long-term care. Three manatees were relocated from the spring run in Homosassa to the facility's above ground pool; the pool environment was used as a staging area for the eventual transfer of the animals to another facility. After several months in the above ground pool, two of the Homosassa manatees were transferred to the Columbus Zoo; due to medical issues, one manatee was transferred to a critical care facility for additional treatment. Currently there are six facilities which hold papilloma virus exposed manatees: SeaWorld Orlando, SeaWorld San Diego, Cincinnati Zoo, Columbus Zoo, Disney's Living Seas and Homosassa Springs Wildlife State Park; these facilities will remain under quarantine until additional research information on papilloma virus becomes available. The Service continues to collaborate with various agencies and partners to determine the best management practices for captive manatees infected with the papilloma virus.

cc: Dave Flemming